Title: From the Rail to Trail as Social Infrastructure:

A Vision for the DL&W Greenway, Buffalo, NY:

Giving New Life to Abandoned Urban Railroads in the Age of Post-Industrial Economy

Abstract:

An extensive railroad network of more than a century-old across the US continent has been one of most affected victims of the American post-industrial economy. Instead of seeing as blight, obsolete railroads lying dormant in cities should be seen as American industrial heritage to be recognized, preserved, and celebrated. Abandoned railways in the city are assets to be transformed to new public places and linear parks giving the people new experience right in their cities. The DL&W railway in Buffalo, dormant for decades, is a perfect candidate to be reborn as a great linear greenway connecting existing nodes/destinations in downtown and Buffalo River. It will be a catalyst for improving neighborhoods, connectivity, and ecology.
Chapter 1: Introduction

It is my honor to present this paper in the 54th IMCL Conference in Santa Fe. I teach urban design at University at Buffalo, the New York State’s most comprehensive public research university, but I will speak today as an urban designer in practice. Situated in an interdisciplinary field of architecture, planning, landscape architecture, and social science, Urban Design is about making connections between people and places, movement and urban form, nature and the built fabric, and environment and public health, and more. Unlike architecture, urban design is focused on the public realm: the placemaking to create more livable, equitable, and beautiful public places.

I am delighted that the organizers of the conference have chosen Public Places for Community and Democratic Dialogue for the 54th IMCL Conference theme. It underscores what we have let ourselves down not to elevate the public realm from the present state to the higher state without which our economic and technological progress means little. Central to our collective civic mission of the 21st century should include making the better, more sustainable public realm.

So, where do we begin?

In response to this big challenge, I have chosen the topic of “Urban Rails-to-Trails”, as an emerging public places. Rails-to-Trails in this discussion refer specifically to those in the city. I will exclude those in the countryside and even in the suburbs. To make the case, I will present a project in my city of Buffalo, NY, called a Plan for the DL&W Greenway. Recently, I have co-published an article on urban pathways discussing their benefits to the public realm and worked on a few projects on the Rails-to-Trail both in practice and in teaching, thus, I believe I am qualified to discuss this topic for this conference. In so doing, it is my hope that this paper will contribute to broadening and deepening the conference theme. To justify my claim, let me take a few step back to put Why the Rail-to-Trail and Why Now in context.

Do you have abandoned or underutilized railroads in your community?

An extensive railroad network of more than a century-old across the US continent has been one of most affected victims of the American post-industrial economy. Instead of seeing it as blight, obsolete railroads lying dormant in cities should be seen as assets. Indeed, they are part of American industrial heritage to be recognized, celebrated, and preserved. I am sure most of you know about or even visited the High Line Park in New York. Since the opening of its first phase in 2009, it has become a very popular “rail-to-trail-in-the-air” overlooking the Hudson River. It attracted 5 million visitors in 2015.

Urban Rails-to-Trails have been gaining an over-due recognition as valuable public places and cultural landscapes. As of 2015, there are 60+ cities world-wide have built or are in the process of building rails-to-trails in their cities, about a third of them are in the US followed by the UK (James Corner, et. al. in The High Line, pp. 430-443). Today, there must be more cities either planning or building rails-to-trails in their cities. Why is there the sudden popularity of the Rails-to-Trails today? I believe there are two main reasons: first, more cities are inspired by the High Line Park and have decided to act on what they can do for their own abandoned or underutilized railroad; and second, they are discovering potential benefits of an urban rail-to-trail.
in their cities. We consider obsolete railroads and bridges as post-industrial infrastructure (i.e., post-industrial landscapes): the obsolete High Line before its transformation was a good example of it. Our key word is infrastructure. To quote Thom Mayne, the architect and urbanist of the design firm, Morphosis, “the problems in the 21st century are much more infrastructural than architectural” (Thom Mayne in Arch. Rec. 2017-04-01). More specifically, by “infrastructural”, I think that Mayne is referring to the much broader system and design for the public realm than buildings alone: that is to say, he is calling for the urgent need for educating the imaginative mind capable of creating more sustainable and dynamic infrastructure: the public realm for the 21st century. In response to the global climate change, our new challenge includes creating a better built environment for it is the built environment that shapes our lives and affects our health. I suspect that some typologies of the public realm have not even invented today. Thus, I believe that the ability to think about urban problems as infrastructural as the system capable of organizing bigger framework is all the more critical today than ever before.

The Rail-to-Trail as a Social Infrastructure

The notion that infrastructure only means building highways, bridges, and basic life-support systems, or the “hard infrastructure”, is no longer adequate today. Hard infrastructure, though still remains essential, is not enough to cross the chasms of increasing racial and economic division, expanding social boundaries like explosion of digital media, and deeply partisan politics of today. The need for “soft”, or “social, or civic” infrastructure in American cities has never been greater today than ever before. It comes at a time when declining social capital has left much of America divided. Today, one-third of people report having no interactions with their neighbors and average Americans spend up to five hours a day watching television (often alone). Moreover, ongoing income inequity and wage stagnation have decimated the middle class, further dividing society into haves and have-nots (Lind, Arc. Rec. 2017-04-01).

Thus, it is my intent to present the DL&W Greenway project, though it is still at a conceptual stage now, as a Social or Civic Infrastructure. In so doing, I would like to discuss potential benefits of the urban Rail-to-Trail movement as a part of the 21st century movement towards creating better and more equitable Social Infrastructure. These benefits include not only preserving the exiting rail corridor as a valuable industrial-cultural landscape but also potential for developing public dialogues through the lens of new “Green Infrastructure”. The challenge here is, first, to preserve the railroad, and second, to transform it into an attractive greenway in the middle of the city. If it is done properly for the public good with creativity and imagination, I believe it would become a catalyst contributing to making the city more democratic: socially more inclusive and accessible; making cities more environmentally sustainable and more economically viable.

Chapter 2: Case Studies

What is the Methodology

The first two decades of the 21st century have eye-witnessed an explosive interest in reclaiming abandoned railroads in the city as a new genre of the public realm in the US and abroad. To succeed such undertakings, of course, would require to resolve a host of challenges: transferring the title from a current owner to a public or quasi-public agency, buy-in or support
from the public and stakeholders, the ability for good land stewardships and management during and after implementation, and perhaps, the most daunting task is to raise capital funding for design and construction. However, successful cases demonstrate the benefits of implementing the project far exceed its initial cost and negative impact (if any) from the redevelopment. To show what I mean, the paper will use a comparative case study methodology. Due to the time and space constraints, only two studies will be briefly discussed. A brief summary of these cases below shows you well-conceived and executed rails-to-trails act not only as new linear parks for the public but also as catalysts for inducing new economic investment in the area, knitting severed neighborhoods, creating nature out of the rust, and more. Most important, a summary of principles learned from these case studies may be applicable to your own community.

**Case Study 1: the High Line Park, New York**

Since the completion of the first phase in 2009, the High Line Park is the result of the transformation from the obsolete elevated freight railway to the public park in the form of a Rail-to-Trail. Paralleling to the Hudson River, it connects 1 1/2 mile (2.4 km) from Gansevoort Street at the Meat Packing District to the West 34th Street at the Hudson Yard in the middle of Chelsea, the densely-settled district. Since its completion in 2014, the three-phased project has become among the most visited parks in New York (or maybe in the world) attracting over 5 million visitors per year. Started by two grass-roots local activists, they formed Friends of High Line (FHL) in 1999 as a not-for-profit non-governmental organization: as the park owner and manager. The project funds came from the federal, city, and private sources. Amenities include frequent access points (a few with elevators), new landscaping, modular precast-concrete pavement units; wood benches, overlooks, amphitheaters, outdoor lighting standards, public restrooms, and outdoor art exhibits. New programming include yoga classes and community urban farming. 400 native species were planned to celebrate plants in all seasons from fragrant summer meadows to sculptural winter brush (xx). Plants are left to their natural growth patterns year-round, though some maintenance is still needed.

**Impact:** This is perhaps the best-known example of Rail-to-Trail conversion up-to-date. The magic of the transformation from the obsolete freight railway into a very popular public place derives from the mastery of the two forces: the one was the over-whelming public and private support that brought generous funds for its planning and implementation, and the other, the quality of the built environment ranging -- from its overall master plan (the winning scheme was selected by an international design competition) -- to utmost smallest design details for landscaping, pathways, benches, and handrails. The result: the winners are the users, both residents and visitors, who can experience the urban oasis-in-the-air in the middle of the dense urban fabric for strolling in (man-made) nature, enjoying incredible vistas to the river and to the Manhattan skylines, resting, and socializing.

However, it has been revealed that the success of the project -- unforeseen by the FHL and the designers at its beginning -- had contributed to gentrification of the area in question. It is because of the transformative effect of the new park triggering the real estate market for up-scale housing and hotels -- even before the first phase was completed (note: as of 2015, there were more than 90 new development completed: about 1/3 or 30 completed and 2/3 or 60 development either under construction and/or planned, the High Line). Up-scale condos were followed by up-scale stores and restaurants within the close proximity to the park. Depending on
how you see this, the overwhelming private investment in the area contributed to gentrifying the Chelsea’s working class neighborhoods. The most affected by the High Line were 5000 low-to-moderate income residents living nearby in the New York City Housing Authority’s Chelsea public housing. Not until undertaking the (second or) third phase did Friends of High Line actively start listening to the affected residents who felt as if this park is not for them. In the recent interview, the FHL admits that they should have done so from the very beginning (Sherman, Danya, in High Line Magazine, “Creating a More Equitable High Line”, March, 2017, retrieved by the author). Today, the residents of the public housing complex have access to new urban farming and a variety of public events.

Case Study 2: Bloomingdale Trail, Chicago

Inspired by the vision of the High Line Park, Bloomingdale Trail is a converted into a linear park from the abandoned elevated railroad called the Bloomingdale Line. Originally constructed in 1873, this freight line was decommissioned in 2001. The Bloomingdale Trail is a multi-purpose greenway for pedestrians and bikers. The idea for transforming the freight line into a greenway began by the grassroots, non-profit organization, Friends of the Bloomingdale Trail (FBT) formed in 2003. It has partnered with the City of Chicago and the Trust for Public Land (TPL) creating a unique organization for the difficult project. The TPL has led the design, project management, and development of the park. They also maintain the park. The overall goal of the project is to give everyone a walk in the park, connect people to nature, each other, public transit, and bike trails surrounding the park. At 2.7 mile (4.3 km) in length (said to be the longest elevated trail in the US), it is the backbone connecting four neighborhoods across the city. Symbolizing the cross-section of the neighborhoods, the trail is also referred to as the 606 using the city’s Zip Codes. Officially opened in 2015, its amenities include new landscaping, pavement; benches, overlooks, access ramps, public bathrooms, and the public arts. The trail elevated 20+ feet above street level features frequent entries enabling all users to access to the trail from the adjacent streets.

Impact: Perhaps, one of the most significant outcome of the new 606-Bloomingdale Trail is that it is planned to become the important connector for four ethnically, economically diverse neighborhoods that have been separated by the same previous freight line. At the time of this writing, we have to wait for more detail studies to learn more about positive impact of the Bloomingdale Trail.

Summary and Principles learned from the Case Studies:

The two case studies we took a quick look at show abandoned railroads in the cities offer perfect opportunities for establishing the new public realm in the form of linear, continuous green-blue corridors giving residents and visitors added benefits to experience, meet, exercise, rest, commute, connect with nature, and more. Most importantly, all these benefits have been created from obsolete and abandoned infrastructure in the middle of the densely settled cities: a true gift for the public good. However, we learned that a new rail-to-trail would have tendency to produce gentrification in the abutting areas, thus causing property value of existing homes to go up and impacting long-term low-to-moderate income residents nearby.

Thus, to achieve the goal of transforming the rusty railroad to a greenway as a new form of the public realm in the middle of the city, eight principles below were culled from the case
studies and my own experience. In the next chapter, I will discuss my project primarily from these principles.

Principle 1: Seek Key Stakeholders’ Support

Principle 2: Do Vision Making

Principle 3: Obtain the Title of the Obsolete Railway to Preserve its Authenticity and for its Reuse

Principle 4: Plan the Rail-to-Trail as part of the Region’s Ecosystem

Principle 5: Establish Connectivity and Accessibility

Principle 6: Create Nature in the City

Principle 7: Foster Public Health, Equity, and Inclusiveness

Principle 8: Preserve and Develop Affordable Housing

Chapter 3: A Vision for the DL&W Greenway

Background

Briefly, the DL&W Railroad is an obsolete corridor built in the mid-19th century to serve Buffalo with its regional transportation needs. Owned and operated by the Delaware, Lackawanna & Western Railroad Company, hence the name, its main operation was the 400-mile-long (640 km) railroad network (US class 1) connecting Buffalo to Hoboken, NJ. From there, wider market along the Atlantic seaboard could be reached. As the relative newcomer of then highly competitive rail transportation market (Buffalo in its heydays was crisscrossed by more than 20 competing railroad companies), the company was said to have invented overnight-express services to meet the New York’s big demand. After a long successful reign that lasted for more than a century, the company finally closed its operation in 1960 that signaled the beginning of Post-Industrial economy.

Stretching 2-mile (3.2 km), the project site is comprised of two connected but contrasting site conditions: the ROW in the western half (1 1/4 mile=2 km) traverses in the middle of residential neighborhoods: the Old First Ward, and the Commodore Parry public housing. It is constructed on a series of earth berms or embankment, 15-foot (4.5 m) above the street level. The berm is contiguous to the residential properties (facing back-yards). An extensive use of trestles enabled the trains to travel straight without street crossings. However, the existing berms, railroad ties, and some remnants of railroad implements are the only remaining industrial artifacts (as all trestles and rails were taken down as scrap metal). The eastern half (3/4-mile=1.2 km) of the ROW traverses the Valley Community, paralleling to the Buffalo River, through the existing park (Red Jacket Park). But the park remains wild, isolated, and hardly accessible. The DL&W ROW is anchored by two bookends: the western end is Canalside, a new emerging waterfront attraction close to downtown core. It is being redeveloped into a tourist destination on the former terminus of the Erie Canal that once linked the city with New York City. At the eastern end is Riverbend where the brand new Solar City, the advanced manufacturing entity, is about open for first production of the next generation of solar panels and roofing (see below).
is separated by the Buffalo River with a half-broken bridge that used to carry the trains. In sum, the existing ROW is sandwiched by a major tourist destination, on the one end, and the new advanced manufacturing plant on the other end. Its transformation to a first-class greenway offers both potential and challenges.

**Justifications for Transforming the DL&W Railway to a Greenway**

Three factual-based conditions contribute to making a prospect of repurposing the DL&W Railroad to an urban greenway more plausible than just a dream. These include: resurgence of Buffalo economy; the lack of demand for extending the NFTA metro transit service to the South-town; and finally an emerging local interest in and support for the DL&W Greenway.

First, Buffalo, New York, is now seeing unprecedented economic revitalization after several decades of continued decline. Downtown is seeing new life thanks to loft-housing, new hotels, and new and good-paying jobs especially in the growing Eds-Meds sector. Solar City, the largest manufacture in the western hemisphere for the new generation of solar panels, is about to begin the first production. Moreover, consider the Larkin District, the former industrial district dormant for decades have recently been revitalized as a vibrant mixed-use hub just outside of downtown. The Larkin District would be the north anchor of the DL&W ROW. This year, the city rolled out the brand-new zoning code, “Green Code”, replacing the archaic 60+ year-old Euclidean Zoning. Although no record of positive impact has been reported yet at the time of this paper, the new code is written in favor of enforcing more visible historic preservation, and contextually-sensitive streetscapes with more attention to pedestrian urbanism. It remains to be seen how the Green Code would empower preservation of abandoned yet historic industrial landscapes such as the DL&W ROW. A prospect appears good.

The second justification for conversion of the dormant track to a greenway is that there is the lack of transit demand for the NFTA to extend its metro service to the South-town. There are a local non-profit group of advocates who are urging the conversion of the existing DL&W ROW to a light-trolley service, primarily for tourism, not for commuting. However, capital expenditure and permits for converting the right-of-way to operate a new service would be prohibitively expensive to justify its cost (a separate recent study by a transit engineering firm to put a small trolley on the DL&W ROW proved this claim. (Source: Western New York Railway Historical Society).

And third, there is an emerging local interest in and support for converting the DL&W ROW to an urban greenway which will be dealt with in the next chapter.

Therefore, repurposing the obsolete railway to a greenway seems most realistic and plausible.

**A Plan for the DL&W Greenway**

Now let me turn to the DL&W Greenway Plan. I will describe it through the lens of the eight principles we articulated above. This project, my research, was initially conducted to plan for better connectivity between the industrial South Buffalo to Buffalo River and the Lake. Through this effort, I discovered the DL&W right-of-way (ROW). A Plan for the DL&W Greenway has given me the opportunity to take the obsolete railway corridor as the liminal space
of the Post-Industrial Infrastructure and to practice the tenets of Landscape Urbanism for my design research. The master plan for its entire 2-mile-ROW (3.2 km) was done with the help of students. It is still at an early conceptual stage.

**Principle 1: Seek Key Stakeholders’ Support**

Start your project with identifying who may be supporters of the idea of transforming the rusty railway in your city into a new greenway. Share your idea with area residents who may be most affected by the change. Talk to larger stakeholders in your neighborhood including Community or Neighborhood Associations. Do you know elected (councilmen or women) and/or appointed officials in your community? Ask what they think about the idea and if the project may have any merits to proceed to the next step.

During our initial research phase of the DL&W Greenway project, we met with a number of key stakeholders including local residents, representatives from the city, county and Niagara Frontier Transportation Authority (NFTA), the latter being the current owner of the obsolete railway. The most enthusiastic support (moral) came from residents of the two abutting neighborhoods: the Old First Ward and the Valley Community. Both leaders from these communities were particularly supportive of the project potential. City planners and other non-profit organizations were also supportive of the idea of the rail-to-trail. We also met with an official from NFTA: she expressed her personal support for the project – without taking any further action. The most recent and successful meeting was held with the leadership from Western New York Land Conservancy, a not-for-profit organization, whose mission is to identify and preserve valuable historic and cultural landscapes in this region so as to protect authenticity of each for public good.

In short, nobody expressed objections to an idea of repurposing the DL&W right-of-way to a greenway. A take-away from a series of meetings we had with the stakeholders over several years was that we learned each stakeholder’s interest and priorities. In general, we were encouraged by their support for the project.

**Principle 2: Do Vision Making**

When you advocate your idea to the stakeholders for preserving the obsolete railway for a new greenway, it is a good idea to have a preliminary plan for your project. One good rendering may be adequate to begin. For example, a bird-eye view of what it might look like would be an effective tool to share your vision with your stakeholders. But when you have gained enough support from core groups, you may want to take a vision-making for the project to the next step: reach out wider stakeholders to advance the vision-making process. Reach out a Community Design Center for their help if there is a one near you. If not, reach out an architecture school in your city or near-by to seek their support. A design studio is often a good way to test ideas for a speculative project such as a rail-to-trail. As you grow more confident than before and if you may have small resources, consider sponsoring a design charrette to generate directions and design options for the project. Invite the area residents who may be most affected by a change and other supporters to get their input. Again, the area Community Design Center or the school may be interested in assisting you with the effort.

For the DL&W project, we started with mapping out hydrological information, railroad and street infrastructure, and historical land use patterns of the site and its larger context. Our
goal then was to understand what we were doing in the first place. As mentioned above, during this initial study we then discovered the obsolete DL&W railway corridor running in the middle of the neighborhoods. Only then, did we begin a visioning process for the project.

**Principle 3: Transfer the Title to Preserve the Post-Industrial Infrastructure as Authentic Cultural Landscape**

Transferring the title of the infrastructure in question and preserving it is a two-pronged process. Given the community’s buy-in for the idea of the rail-to-trail and preservation of the obsolete railway as the cultural landscape, the next big question is how to kick-start the project – by transferring the current title to new ownership. This depends on local circumstances. For example, transferring the title of the High Line from the previous owner to the FHL seemed relatively easy. In the Bloomingdale Trail in Chicago, this was tricky. The FBT was able to hold the new title for the old line when the city and the Trust of Urban Land stepped in to form a joint ownership. Like the Bloomingdale Trail, transferring the title of the DL&W right-of-way from NFTA, the current owner, to a new public ownership may pose a new challenge. Among other options, the WNY Land Conservancy seems a qualified candidate to hold a new title of the obsolete railway.

Preserving old infrastructure such as abandoned railways is our moral and ethical obligation. As mentioned at the beginning, obsolete railroads lying dormant in urban fringes (created liminal spaces) should be seen as assets – not as liabilities. Fortunately, many cities are now rediscovering potential of these rusty railways in their own backyards. Their transformative possibility to become new public parks and pathways is particularly attractive to cities like Buffalo which once served as a region’s transportation hub between the Midwest to the East Coast.

As the initiators of the High Line Park were inspired by discovering the unexpected beauty of nature that blanketed the dormant railway, the people of Buffalo should discover some of the unique landscapes from the abandoned DL&W railroad that have been created by over decades of abandonment. At this moment, however, the weathered landscapes cannot be experienced unless you are willing to take chances of trespassing. Despite of losing all metals of the railway, DL&W ROW still retains its original ambiance. You can view it as a cultural landscape worthy of preservation in perpetuity.

**Principle 4: Plan the Rail-to-Trails as a part of the Region’s Larger Ecosystem**

Underutilized or abandoned railroads are in the form of “brownfields”. They are normally contaminated during the life of the use, thus requiring some remedial measures to allow safe human use. Determination of severity of the contamination is up to the local or state agency (Department of Environmental Conservancy, for example). But the obsolete railway may not always be so contaminated to the extent that aggressive expensive measures would be needed. Consider using natural healing power of the ecosystem to help remedy the contamination.

It is likely that an old railway in your community is located near a body of water such as a river or a marshland or lake or an ocean. If so, consider it as part of the regional-wide ecosystem. Link your rail-to-trail to these environmentally sensitive area to promote natural ecological power for restoring the degraded environment. Good connection to and from the railway to the water body and woodland is the key to the environment. The value of reclaiming
the railway within the region’s ecology corridors is high, giving nature chances to regenerate itself as well as providing users with experiencing regenerated nature and its beauty (there are several literature on ecology of greenways, landscapes and land use planning. See Dramstad, Olson and Forman; Smith and Hellmund, et. al.).

The existing DL&W railroad was built near Buffalo River (the largest water-shed in the metro-region) emptying to the Lake Erie, the part of the Great Lakes ecosystem. It is also important to consider its close proximity to the Outer Harbor, the 600-acre public lakefront park although much of which has remain undeveloped. Its coastal zone is known as one of the key spawning grounds for many lake fish and the key stop-overs for many migrating birds (Wooster). The recent dredging of the Buffalo River and its shore restoration should help to controlling its water quality and restoring native species. Thus, it is important to recognize the DL&W ROW is part of geo-coastal ecosystem located within the Lake Erie-Buffalo River.

**Principle 5: Establish Connectivity and Accessibility**

Picture this: you ride on your bicycle to commute to your job via a new greenway without traffic as well as you could leisurely stroll along it with your family? Establishing physical, social, and civic connectivity is a key to a successful rail-to-trail project. As mentioned above, the Bloomingdale Trail has been seen successful as it contributed to re-knitting the four abutting neighborhoods that had been separated by the very same freight line for a long time. This shows that a rail-to-trail has potential of working as a connector or a linkage to bring equalitarian and diverse users for practical, recreational, and social activities (James Corner, “The Ecological Imagination: Life in the City and the Public Realm” in Nature and the City, pp2-29).

Accessibility to and from the DL&W ROW would be relatively good thanks to its location as it traverses 2 mile (3.2 km) from Canalside through a couple of neighborhoods to emerging Solar City at the other end. However, better connectivity to its surroundings would be needed. For example, it is important to improve connectivity to a relatively new employment hub just outside of downtown, known as the Larkin District. In response to this district stakeholders’ interest in connecting it with to the Buffalo River (so as to enable the workers in the district to walk to the river and back during a lunch break), we subsequently proposed a plan for a new Larkin Greenway using existing railways. Actually, a Larkin Greenway would comprise three separate new greenways: one is a rail-to-trail conversion of an abandoned railroad; and the other two would be in the form of a [Trail-with-Rail]: a dedicated pedestrian/cyclist path next to active railways. Conceptually speaking, if all these ideas have merits and public support, three Larkin Greenways -- as tributaries of DL&W Greenway, the major flow – allowing you to enjoy a walk to the river (the walk to the water is an ancient concept, thus it still holds fascination of satisfying the human’s instinctive curiosity to discover what lies ahead at the other end).

**Principle 6: Create Nature in the City**

Repurposing the underutilized railways means you have the opportunity to transform a rusty and obsolete railway corridor to a new type of a linear park in your city. Transform it to a nature corridor as much green as you possibly can. Linear parks -- those public spaces that are relatively skinny but long and continuous – are a highly effective means of establishing nature in the city. Olmsted parkways – those magnificent, tree-lined boulevards built in the 19th century --
though it is a classical precedent of this morphology, would not be a proper image for what we are advocating here: our linear greenway is much more intensified nature with abundance of plant materials such that it would serve not only for human use but also for wildlife corridor. We have seen how the High Line Park as the linear and “landscaped” park can give the public unique experience of “venturing into nature-in-the-city” including some unexpected scenic views from the elevated pathway that nobody knew before.

The DL&W Greenway, thus, should be planned as a linear public park for walkers, joggers and cyclists. No motorized form of transportation should be allowed on the greenway with exception special service/emergency carts. Moreover, the DL&W Greenway should serve as a park for native species to re-generate and re-establish. They in turn bring pollinators, song birds, and other wildlife as you could see deer roaming about occasionally even today. With the city’s on-going economic rival, I am advocating that Buffalo should pay more close attention to repurposing the obsolete elevated corridor thus creating a new type of Public Places for the Community (the conference theme) without which the economic rival means only a half of its total success.

Principle 7: Foster Public Health, Equity, and Inclusiveness

A new rail-to-trail in your community would promote public health and improve quality of life. Ancient civilizations discovered that nature has the magical power to help bring human health both mentally and physiologically. Even today, often unexpected views and vistas stimulates walking and unknown places pull visitors to explore more. Often grass and wild flowers in parks and nature walks give scent that soothe walkers along the path. Recent scientific research has shown that a healing garden in the hospital contributes to lowering patients’ heart rates and cortisol levels within minutes. As well, good views to nature and gardens in the hospital as opposed to a blank wall help patients’ recovery quicker (Goldhagen, p.142). Walking, whether recreational or purposeful such as commuting or picking up grocery from a local store, is a good form of exercise.

Today, given an unappreciative rate of diabetes caused by obesity among Americans, a form of contemporary epidemic, walking has received unquestionable endorsement from the medical field. The High Line Park demonstrates that opportunities to interact with nature (even man-made nature) seeing plants (native species) and small insects such as pollinators are all the more important in the increasing artificial environment flooded by digital images and sounds. Moreover, additional programming such as urban farming should be part of a plan as they have been proven time after time to bring people together to grow food by themselves. This will give them some source of locally grown and fresh produces as well as sharing the pride and interdependence that are often lacking today especially among low-income neighborhoods and the younger generations. The latter are especially affected by digital media blitz that keeps them indoors without benefits of getting outdoors for fresh-air and exercise.

The new DL&W Greenway should be planned and built for these health benefits in mind for all walks of life. It should be planned for not only for those who can afford time to come to enjoy the would-be park but those who live in the adjacent working-class neighborhoods. Again, the sponsors and planners of the High Line Park had learned from their initial mistakes of not involving neighboring low-income residents as key stakeholders. They also started newer
programs for youth camps and urban farming for the young and the old, alike (source High Line).

**Principle 8: Preserve and Develop Affordable Housing**

Typically, those who live next to railways tend to be those with less means. It is true in Buffalo although there are some exceptions where active railroads are hidden below the street-level. How about in your community? In general, making a new rail-to-trail thus provides special challenge for addressing socio-economic equity. This is the reason why: in general, public improvements of infrastructure would catalyze private development. For example, say, the city would transform an unappealing street into a beautifully tree-lined and pedestrian-friendly street with reduced traffic lanes. High-end housing and other mixed-use development would follow the change along the improved street -- the result is gentrification of the neighborhood surrounding the street. The High Line Park is the case in point: its sponsors, though anticipated before the development of the first phase, were surprised by its overwhelming reaction from private developers that transformed the gritty working neighborhood to a fashionable one. Even the use a zoning mechanism, so-called “Air-Rights”, to control private development from encroaching too close to the elevated park, they failed to include an affordable housing-provision as a mandate in the initial development.

The outcome of the first phase was quick and obvious: gentrified Chelsea. The most affected by the park were long-term low-to middle income residents living in the nearby public housing. The High Line Park has turned its back to them. When the sponsors found this out, they were said to fixing this mistake. In Chicago, they have done better when they transformed the obsolete railway into the 606 Bloomingdale Trail. Not only did they use the linear principle of the greenway design to enhance more social interactions amongst residents of the abutting neighborhoods but also they have addressed the need for affordable housing along the trail. The 606 is a model for the others to follow.

Thus, it is incumbent on the city of Buffalo and potential developers of the future DL&W Greenway to set aside a firm policy not to incentivize high-end housing development but to make sure the new park will maintain home values of the neighborhoods and keep residents living in existing low-to-moderate income housing. As in the 606, Buffalo should add more affordable housing units within a certain proximity of the DL&W Greenway.

**Chapter 4. Conclusion**

I contend that the Rail-to-Trail as the linear public park can be made to be the form of Social or Civic Infrastructure. It is as much essential as Hard Infrastructure such as clean water, sewer and highways and bridges in the 21st century.

In summary, using the project: *A Master Plan for DL&W Greenway* for Buffalo, the intent of this paper was to demonstrate the claim I laid at the beginning: how to bring the new life from obsolete infrastructure in the city. In so doing, it is hoped that the dormant railway will be transformed to become a public park or a greenway drawing people from all walks of life to enjoy regenerated nature, promenading, jogging and cycling along it. The new DL&W Greenway would establish new connectivity between downtown, Solar City, and the Larkin District, allowing the users from these destinations to get to the water’s edge. The presentation
showed highlights the project including case studies, analyses, the master plan, and its justifications for conservation and adaptive-reuse of the historic landscapes.

If you have an underutilized or abandoned railroad in your community, I would like to leave the take-home as follows:

- Consider alternatives for transforming the obsolete railway into a new form of greenways in your city.
- Reach out to your stakeholders. Talk to city leaders, and key community groups asking their responses to the idea and alternatives. Do involve a low-to moderate income community if there is one near the railroad.
- Consider the project in the context of the regional ecosystem.
- Preserve the value of the railroad landscapes as industrial heritage of your city.
- Make sure the project to become a backbone of the community. Establish new connection to existing nodes and activities enhancing social interaction for all walks of life.
- Plan by design. Invite architects, landscape architects and urban planners to assist your project, and finally,
- Regenerate affected nature on and along the railroad. Use nature’s healing power for promoting public health, urban farming, and public gathering.

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Key Words:
Public Places/Public Realm, Soft Infrastructure, Urban Rail-to-Trail (Rail-to-Trail in the city), Urban Greenway, Regenerated Nature in the City, Catalyst/Transformative Power, Public Health, Liminal Space, Landscape or Ecological Urbanism

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For information of the High Line Park and the 606 Bloomingsdale Trail, and other projects on Rails-to-Trails, there are many journal articles and website sources which is not listed here.
These photos showing existing condition of the DL&W right-of-way

Proposed master concept plan for the DL&W Greenway

The two-mile long greenway would traverse the neighborhoods from Canalside (located left side of the trail) to new Solar City at Riverbend (right across Riverbend) and the Larkin District (upper right).

Proposed images for the DL&W Greenway
from left: a summer scene, the middle: a winter scene and the right, a summer scene of the thick woodland near the river.

Image Source: Studio Hiro Hata, University at Buffalo